

10/586189

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
28 July 2005 (28.07.2005)

PCT

(10) International Publication Number  
WO 2005/068911 A1

(51) International Patent Classification<sup>7</sup>: F23N 5/02

(74) Agent: GAIN INTERNATIONAL PATENT & LAW  
FIRM; Room No. 205, AceTechno Tower 5sec., 197-22,  
Guro-dong, Guro-gu, Seoul 152-766 (KR).

(21) International Application Number:  
PCT/KR2004/002265

(22) International Filing Date:  
7 September 2004 (07.09.2004)

(25) Filing Language: Korean

(26) Publication Language: English

(30) Priority Data:  
10-2004-0002600 14 January 2004 (14.01.2004) KR

(71) Applicant (for all designated States except US): CNTEK,  
CORP. [US/US]; 806 Moris Tpke 4F, Short Hills, NJ  
07078 (US).

(72) Inventor; and

(75) Inventor/Applicant (for US only): RHO, Young-Gyu  
[KR/KR]; 433, Maryong-ri, Seosu-myeon Gunsan-si,  
Jeollabuk-do 573-941 (KR).

(81) Designated States (unless otherwise indicated, for every  
kind of national protection available): AE, AG, AL, AM,  
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,  
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,  
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,  
KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG,  
MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH,  
PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN,  
TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

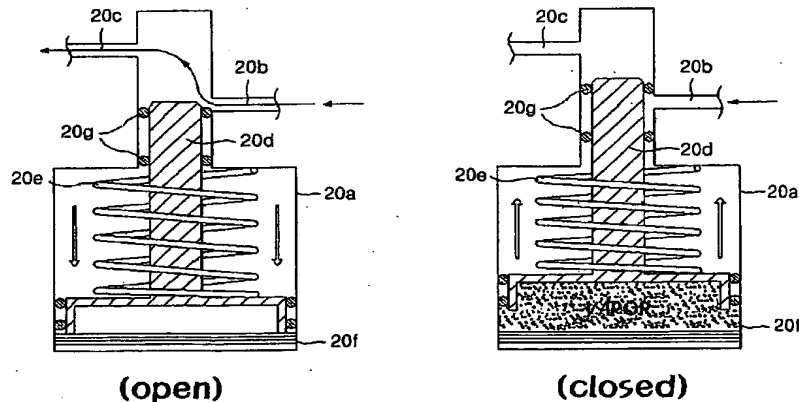
(84) Designated States (unless otherwise indicated, for every  
kind of regional protection available): ARIPO (BW, GH,  
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,  
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),  
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,  
FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI,  
SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,  
GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

[Continued on next page]

(54) Title: GAS CONTROL/BLOCK VALVE AND AUTOMATIC CIRCULATION DEVICE OF WARM WATER USING THE  
GAS VALVES



(57) Abstract: The present invention relates to gas controlling and blocking valves and An automatic warm water circulator using the same, and includes a circulation cycle formed such that a reservoir is connected to a boiler by a supply pipe, the boiler is connected to a heat exchanger by a discharge pipe, and the reservoir is connected to the heat exchanger by a circulation pipe, a hollow combustion chamber provided in the lower side of the boiler and having both sides protruded toward the outside of the boiler, a gas supply and ignition device for supplying the gas to the inside of the combustion chamber and for burning the gas to heat water in the boiler, and a supply valve and discharge valve respectively provided in the supply pipe and the discharge pipe and automatically opened and closed in response to the inner pressure for the boiler. Since the gas is controlling and blocking valves and the automatic warm water circulator using the same uses portable gases as a heat source for producing and circulation warm water, the automatic warm water circulator can conveniently supply the warm water to various heaters even outdoors where it is difficult to use electric power.

WO 2005/068911 A1

**WO 2005/068911 A1**



---

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*